MAG Regional Transportation Plan

Phase 1

Transportation Planning Principles

Draft Task Report

February 2003

MARICOPA ASSOCIATION of GOVERNMENTS

Regional Transportation Plan – Phase 1

TRANSPORTATION PLANNING PRINCIPLES

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February 2003

PREFACE

This document is one of a series of reports and documents that have been prepared for the MAG Regional Transportation Plan – Phase 1 project. There are five published documents that were produced as final products of specific tasks. These five documents form the basis of the **Summary Report**. The five task reports are:

Status of Regional Transportation
Values, Goals and Objectives
Alternative Growth Concepts
Analysis of Alternative Growth Concepts
Transportation Planning Principles

In addition to the above documents, several other products from RTP Phase 1 are available in the project files. These products provide documentation of the major steps taken in the project and provide input to the five documents listed above and the final report.

- **Issue Papers**:
  - Demographics and Social Change
  - New Economy
  - Environmental and Resource
  - Land Use and Urban Development
  - Transportation Modes and Technologies

- Five forums were held in February and March 2001 with presentations by nationally recognized experts in the five categories listed above under Issue Papers. **Videos** were made of most of the forums, and a presentation was prepared identifying the major themes of the forums.

- Sixteen focus group meetings were held in May and June 2001. The groups included various geographic, ethnic and agency orientations. A summary is provided in the **Focus Groups Results** task paper dated August 2001.

- Interviews were held with 21 resource and agency stakeholders throughout the metropolitan area. The findings from these interviews were documented in a task paper dated October 2001.

- The **Population Projections** task paper dated September 19, 2001, was prepared to provide the "horizon" projections to be used in the analyses for this RTP.

- A task paper entitled **Summary of Research and Transportation Model Adjustments for Vehicle Trip Reductions** dated March 27, 2002, was prepared to assist in determining potential traffic impacts of trip reduction actions.

MAG RTP PHASE 1: TASK 8

TRANSPORTATION PLANNING PRINCIPLES

Draft: Revised 02/12/03

This task report brings Phase 1 of the RTP to a conclusion by providing a set of regional transportation planning principles derived from the work done for previous tasks. Each principle pertains to the topic of Multimodal Capital Investments, Revenue Enhancement, Travel Reduction, Land Use Monitoring and Management, Transportation Technology Deployment, or Transportation Planning/Policy Innovation.

Each transportation planning principle is summarized under a bullet. Sub-bullets provide illustrative statistics, examples or other elaboration of the principles. Sources of the principles and supporting data include the Expert Panel Forums; Issue Papers; Status of Regional Transportation Report; Values, Goals and Objectives; and Analysis of Alternative Growth Scenarios.

This task report is intended as a starting point to generate further discussion about desirable directions for transportation planning and investments in the MAG area.

Multimodal Capital Investments

- Unless multimodal transportation problems are addressed, mobility and accessibility will deteriorate significantly because of a severely congested highway system, placing serious constraints on the movement of people and goods in the region.
    - In the year 2001, 29% of freeway lane miles and 10% of arterial lane miles experienced substantial congestion—i.e., Level of Service E or F—during the PM peak hour.
    - By 2040, the congested percentages are forecast to increase to 68% for freeway lane miles and 42% for arterial lane miles. These increases will occur despite an expected increase of approximately 40% in both freeway and arterial lane miles between 2001 and 2040.
- Streets and highways are the prime carriers of travel in the region and will continue to serve this function for the foreseeable future. The major portion of future increases in travel demand will be carried by this mode.
    - Today approximately 99% of all trips are made in single- or multiple-occupant private vehicles.
    - This overall percentage is expected to remain virtually unchanged in the year 2040—although the percent using multi-occupant vehicles is expected to rise slightly.
    - However, the development of high-capacity transit, especially rail, may have an effect on mode split during peak periods, when most congestion occurs.

- Transit serves the basic travel needs of many people who are dependent on transit as their sole or primary means of transportation. It also serves as an attractive mode for those who prefer not to rely solely on the automobile and desire lifestyle alternatives where a car may be optional.

    - Approximately four-fifths of current riders on local bus routes are transit dependent.

    - In contrast, over 90% of express bus riders have one or more vehicles at home. Rapid bus and light rail systems currently under design are expected to attract many more "choice" riders.

    - The number of transit passenger miles in the MAG area is projected to more than triple from 2001 to 2025.

- Freight transportation represents a critical component in the economic growth of the region. Partnerships at the regional level with users and providers of freight transportation services will facilitate future improvements to the goods movement system.

    - Ongoing issues that MAG will continue to address in cooperation with ADOT and other agencies include CANAMEX corridor freight traffic and the widespread use of regional highways by Mexican trucks as permitted by NAFTA.

- Airports are key economic engines in the region and aviation system planning at the regional level is essential for their development and efficient operation.

    - From 1987 to 1997, Sky Harbor's national ranking in annual commercial aircraft boardings rose from fourteenth to eighth; the absolute number increased by about two-thirds.

    - Annual commercial boardings are projected to triple in the next 40 years (pre-9/11/01 estimate). Air cargo tonnage is projected to increase by a factor of 18 during the same period.

- Bicycle and pedestrian options provide mobility for many people, especially in higher density, mixed-use neighborhoods. These modes are important elements of the comprehensive transportation planning process.

    - MAG has developed the Pedestrian 2000 Plan, Regional Off Street System Plan and Regional Bicycle System Plan to help guide planning and development of non-motorized modes.

    - As mixed-use master planned communities have become a prevalent development style in the region since the 1980s, pedestrian trail systems have become a valued amenity, for linkages between homes, commercial nodes and educational facilities, as well as for recreation. The development community has begun to explore pathway systems to accommodate other alternative modes (e.g., neighborhood electric vehicles) in some of the latest projects.

Revenue Enhancement

- Continuing and reliable sources of funding to meet transportation needs in the region are essential to keep pace with projected growth, as well as to develop and maintain the transportation network in a cost-effective manner.

    - Completion of all transportation investments in the MAG Long Range Transportation Plan for 2000-2020 will cost an estimated $23.5 billion, of which over $9 billion will have to come

from sources not currently in place. Such sources could include an extension of the current half-cent sales tax and an increase in the state gasoline tax.

  - For the period 2000-2040, this gap between financial needs and committed resources is projected to increase to $20 billion.

- Rapid population growth and the need for modal options call for regional funding sources that increase in proportion to population growth and allow flexibility in meeting needs across all modes.

  - The Highway User Revenue Fund, by far the largest source of local transportation funding in Arizona, is constitutionally restricted to street and highway purposes.

  - Beyond the current existing countywide half-cent sales tax, which expires at the end of 2005, no statutory authority currently exists for a regional source of transportation funding in Maricopa County.

  - Several of the largest cities—especially Glendale, Phoenix and Tempe—have taken the initiative in making transit and other transportation investments that benefit both the city and the region.

  - The major funding sources for transportation in Arizona, such as the gasoline tax, are not indexed for inflation. Revenue increases due to population growth tend to be counterbalanced by factors such as improving vehicle fuel efficiency and increasing use of alternative fuels.

- The entire region's population and economy benefit from transportation improvements. A variety of revenue options to fund transportation in the region merit continuing consideration, including non-user-based and user-based sources, as well as non-traditional sources such as charges tied to specific corridors or services.

  - While many potential new funding sources for transportation have been identified, only a few have the potential to raise large amounts of revenue. Chief among these are dedicated sales taxes and increased (or indexed) gas/use fuel taxes.

- Federal and state funding represent significant sources for transportation improvements and maximizing their use is essential to address regional needs and priorities.

  - Federal sources account for 9% of street and highway project funding, and 39% of transit project funding, in the MAG Transportation Improvement Project for fiscal years 2002 through 2006.

Travel Reduction

- Increasing the capacity of the street and highway system, alone, will not solve future congestion problems. Investments are needed that produce incentives for travelers to share rides, use transit, travel outside of peak periods or eliminate trips.

  - Currently, over 1,300 employers representing approximately 480,000 employees and students participate in the Maricopa County Trip Reduction Program, which makes use of a variety of strategies and incentives to reduce the number of work-related vehicle trips.

- While not reducing travel directly, more efficient use of existing facilities can help reduce the need to invest in new facilities.

    - Improved efficiency of roadway use can result from private behavior as well as public policy actions. From 1985 to 2000, the capacity of a typical freeway lane, as reported in the *Highway Capacity Manual*, increased from 2,000 to 2,300 passenger cars per hour per lane. This change occurred as motorists became willing to accept shorter gaps between vehicles operating at high speeds.

Land Use Monitoring and Management

- Appropriately coordinated land use patterns and the regional transportation system can help reduce travel demand and increase travel by alternative modes. The transportation system, in turn, can constitute a critical support to implementation of a region's development vision.

    - An assessment of the planned 20-year regional land use patterns resulting from general plan updates (in conformance with state Growing Smarter Plus legislation) identifies 20 to 30 regional activity centers that could readily support alternative mode circulation within their areas of influence, as well as between cities.

    - According to a study of Transit and Urban Form by the Transportation Research Board, experience in North and South America has shown that transit can play the strongest role in providing regional access and supporting development if it is part of an overall regional vision, if it links compact activity centers, if supportive land use and design policies exist to strengthen and sustain station area development, and if commitments are made to high-quality transit service. Because of the current climate of residential and employment suburbanization, automobile dependence, and limited funding for transit, such a program requires political leadership, innovative and cooperative agency relationships, a good public relations campaign, and the patience to wait for long-term results.

- Land use planning is most effectively conducted at the local level within a common set of state or regional guidelines, and coordinated through continuing communication at the regional level. These elements can ensure coordination and concurrence among adjacent jurisdictions, and provide an intergovernmental process to review planned projects of regional significance.

    - The recently enacted Growing Smarter and Growing Smarter Plus legislation in Arizona requires all communities with a population greater than 10,000, as well as those with a population over 2,500 and a growth rate greater than 2%, to adopt updated general plans with seven required elements, review at the regional level and coordination with adjacent municipalities. All other incorporated communities must update their general plans with two required elements, plus regional review and coordination with adjacent municipalities.

    - Some cities in the MAG region have begun to enter into revenue sharing initiatives (i.e., Tempe and Chandler in the I-10 corridor, and most recently Mesa and Gilbert).

- A commitment to establishing a strong relationship between transportation and land use, through development standards and local incentives, can result in significant mixed use development surrounding light rail and bus rapid transit stations. Such development can contribute to community revitalization, offer alternative residential opportunities and boost transit ridership.

Transportation Technology Deployment

- New technologies offer the potential to reduce the need to travel, make the traveler more knowledgeable and enable the transportation system to operate more efficiently.

    - MAG's recent ITS Strategic Plan Update recommends $325 million for systems deployment and expansion in the region.

    - In addition to ITS, continuing development of automotive technology promises further improvement in pollutant emissions and fuel efficiency per vehicle mile of travel.

- A centralized, regional clearinghouse for information and coordination of initiatives between jurisdictions is required to maximize the benefits of new transportation technologies.

Transportation Planning/Policy Innovation

- The transportation planning process is most effective when it adapts to changes and trends in society and takes advantage of new planning techniques.

    - MAG has analyzed the relative advantages, disadvantages and traffic impacts of four growth scenarios for the first half of the 21st century. These scenarios were designed to reflect possibilities ranging from continuation of existing trends to major changes in the direction and management of regional growth.

    - MAG's response to social change includes intensified efforts to understand and meet the mobility needs of an aging population, as well as linkage of transportation and human services planning.

- Regional decision-making is essential for the development of the multimodal transportation network and is best conducted through a planning process where all jurisdictions sit at the table to establish needs and priorities.

    - MAG and other planning agencies will continue to explore and implement innovative partnerships to meet specific needs. Examples include the joint MAG/ADOT CANAMEX Corridor Study (recently completed), and the coordination of the MAG High Capacity Transit Study with the RPTA Regional Transit System Study (which complements the MAG study by focusing on bus, paratransit and rideshare modes).

    - MAG is working with cities (e.g., Scottsdale/Tempe, Chandler) to study expansion opportunities for the regional fixed guideway transit system, and to ensure that local concerns and considerations are appropriately addressed at the regional level.